II. AMENDMENTS TO THE DRAWINGS:

FIGS. 1-4 (drawing pages 1/2 and 2/2) have been amended. Replacement sheets are enclosed herein.

IV. AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Original) A signal generator (2) for generating a pulse width modulated signal, comprising: matched reference (4) and modulation (6) ramp circuits, each including a current source (8, 32), a capacitance (10) arranged to be charged by the current output from the current source (8, 32), a switch (24) for discharging the capacitance, and a voltage detector (18) for detecting a predetermined charge on the capacitance; wherein the output (22) of the voltage detector (18) of the reference ramp circuit (4) controls the switch (24) of both the reference (4) and the modulation ramp circuits (6); and the output (32) of the voltage detector (18) of the modulation ramp circuit (6) is connected to an output (30) for providing the pulse width modulated signal.

2. (Original) A signal generator according to claim 1, wherein in each of the measurement and modulation ramp circuits the current source (8, 32) is connected to the capacitance (10) at a measurement node (16); the voltage detector (18) has a sense input (20) and an output (22) with the sense input (20) being connected to the measurement node (16), for detecting the voltage on the measurement node (16) and outputting a control signal on the output (22) under predetermined conditions; the switch (24) is arranged across the capacitance (10); and the switch (24) has a control input (28), the switch being arranged to be closed by a signal on the control input (28) for discharging the capacitance in response to the control signal; the capacitance (10), voltage detector (18) and switch (24) of the reference (4) and modulation (6) ramp circuits are matched; and the control output (22) of the voltage detector (18) on the reference ramp circuit (4) is connected to the control input (28) of the switches (24) of both the reference (4) and

modulation (6) ramp circuits.

3. (Currently Amended) A signal generator according to claim 1 [[or 2]] wherein the current source (8) of the reference ramp circuit (4) is a fixed current constant current source (32) and the current source of the modulation ramp circuit (6) is a modulated current source having a control input for controlling the output constant current, and in turn for controlling the percentage of time the output is on.

4. (Currently Amended) A signal generator according to [[any preceding]] claim 1 wherein the switch (24) in each ramp circuit is a transistor having controlled terminals (26) connected across the capacitance and the control terminal (28) connected to the output of the voltage detector of the reference ramp circuit.

5. (Currently Amended) A signal generator according to [[any preceding]] claim 1 wherein the modulation (6) and reference (4) ramp circuits are integrated on a single semiconductor substrate (70).

6. (Currently Amended) A switching dc-dc converter circuit comprising:

a dc input ~~(40, 42)~~;

a dc output ~~(60, 62)~~;

a signal generator ~~(2) according to any preceding claim~~ for generating a pulse width modulated signal, comprising:

matched reference and modulation ramp circuits, each including a current source, a capacitance arranged to be charged by the current output from the current source, a switch for discharging the capacitance, and a voltage detector for detecting a predetermined charge on the capacitance; wherein the output of the voltage detector of the reference ramp circuit controls the switch of both the reference and the modulation ramp circuits; and the output of the voltage detector of the modulation ramp circuit is connected to an output for providing the pulse width modulated signal; and

a switching module ~~(72)~~ connected between the dc input and the dc output and containing at least one switch ~~(46)~~ controlled by the output of the voltage detector of the modulation ramp circuit of the signal generator ~~(2)~~ to convert an input dc voltage into an output dc voltage.

7. (Original) A power switching device according to claim 6 further comprising a device package (66) including the signal generator (2) and at least one power transistor switch (46).

8. (Currently Amended) A power switching device according to claim 6 [[or 7]] comprising first (46) and second (48) power transistors wherein the signal generator (2) is arranged to switch on the first power transistor (46) only when the second transistor (48) is switched off and to switch on the second transistor (48) only when the first transistor (46) is switched off.

9. (Original) A method of generating a control signal for a pulse width modulator, including: providing matched reference (4) and modulation (6) ramp circuits; each of the first and second ramp circuits (4, 6) including a current source (8, 32), a capacitance (10) arranged to be charged

by the current output from the current source; a switch (24) for discharging the capacitance, and a voltage detector (18) for detecting a predetermined charge on the capacitance; driving a constant current to charge the capacitance (10) of the reference ramp circuit; supplying a modulated current to charge the capacitance (10) of the modulation ramp circuit (6); detecting in the voltage detector (18) in each ramp circuit (4, 6) when the voltage across the respective capacitance (10) exceeds a predetermined value; outputting a control signal from the voltage detector (18) in the reference ramp circuit (4) to the inputs of the switches (24) in both modulation and reference ramp circuits (4, 6) to discharge the capacitance (10) when the voltage across the capacitance in the reference ramp circuit exceeds the predetermined value; and outputting the signal from the voltage detector (18) in the modulation ramp circuit (6) as the control signal for a pulse width modulator.

10. (Original) A method according to claim 9 further including adjusting the modulated constant current to vary the percentage of time the output is on.

V. REMARKS

Claims 1-10 are pending in this application. By this amendment, claims 3-6 and 8 have been amended. Applicant does not acquiesce in the correctness of the rejections and reserves the right to present specific arguments regarding any rejected claims not specifically addressed. Furthermore, Applicant reserves the right to pursue the full scope of the subject matter of the original claims in a subsequent patent application that claims priority to the instant application. Reconsideration in view of the following remarks is requested.

In the Office Action, a copy of the international application and an English language translation of the international application, as required under 35 U.S.C. 371(c)(2). Copies of these documents are forthcoming.

In the Office Action, the layout of the specification is pointed out as not following certain preferred layout guidelines. With respect to the Office's suggestion regarding the specification, Applicant thanks the Office for providing information about recommended section headings. However, Applicant respectfully declines to add the headings. Section headings are not statutorily required for filing a non-provisional patent application under 35 U.S.C. § 111(a), but per 37 C.F.R. § 1.51(d) are only guidelines that are suggested for Applicant's use. See *Miscellaneous Change in Patent Practice*, Response to comments 17 and 18 (Official Gazette, August 13, 1996) [Docket No.: 950620162-6014-02] RIN 0651-AA75 ("Section 1.77 is permissive rather than mandatory. ... [T]he Office will not require any application to comply with the format set forth in 1.77").

In the Office Action, various informalities are objected to in the disclosure. In response Applicant has amended the specification to address the informalities. Accordingly, Applicant respectfully requests withdrawal of the objection.

In the Office Action, aspects of the invention are objected to for allegedly being not sufficiently enabled. First, the Office objects to an alleged conflict in the specification between a statement that an op-amp is not required under the present invention and, yet, the Office alleges that in order to detect whether a charge on the capacitor is above a predetermined charge, that a comparator comprising an op-amp would be required. In response, Applicant respectfully disagrees with the Office's technical allegation. Further, lines 11-12 on page 2 of the specification states "a voltage detector for detecting a predetermined charge on the capacitance." There is no substantiation offered by the Office why the aforementioned specification language requires a comparator and/or an op-amp to complete the task. Accordingly, Applicant respectfully requests withdrawal of the objection. Second, the Office objects to an alleged conflict between specification language on page 6, line 28, related to the sign of the output voltage of modulation ramp circuit and the outputs depicted in figure 2. In response, Applicant contends figure 2 is merely an illustrative example of a particular embodiment. Accordingly, Applicant respectfully requests withdrawal of the objection. Third, the Office objects to allegedly not proper idiomatic English at page 6, line 30 through page 7, line 1 of the specification. In response, Applicant has amended the specification. Accordingly, Applicant respectfully requests withdrawal of the objection.

In the Office Action, Figures 1, 2, 3 and 4 are objected to for various reasons. In response, Applicant has submitted corrected replacement sheets for Figures 1, 2, 3 and 4 addressing the objection, in accordance with the Office's request. With regard to Figure 2, Applicant has added a "time" aspect to the X-axis. Applicant respectfully contends that a voltage diagram, such as depicted in Figure 2, is known and understood by one of ordinary skill in the art of pulse width modulation signal generators. In Figure 4, elements S1 and S2 have

been renumbered to 51 and 52, respectively. In Figure 1, element 72 has been renumbered 70. In Figure 3, reference numbers 52 and 58 have been added. Further, reference numbers 17, 24 and 26 have been added to Figure 1; and, reference number 30 has been added to Figure 4. Accordingly, Applicant requests withdrawal of the objection.

In the Office Action, claims 9 and 10 are allowable. Applicants gratefully acknowledge the allowance of subject matter.

In the Office Action, claim 3 is allowable if rewritten in independent form to include all the limitations of the base claim and any intervening claims. While Applicant gratefully acknowledges the allowance of subject matter, Applicant respectfully contends that for reasons stated below independent claim 1, as amended, is in condition for allowance, and therefore rewriting any dependent claims in independent format is unnecessary.

Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Venema (US Patent No. 4,633,168), hereinafter "Venema". Claim 5 is rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Venema. Claims 6-8 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Venema in view of Sase et al. (US Patent No. 6,798,180), hereinafter "Sase".

With respect to claim 1, Applicants submit that Venema fails to disclose each and every feature of the claimed invention, including a "modulation ramp circuit[s], each including a current source. (*See* claim 1, as similarly recited in claim 6.)

In response, Applicant respectfully contends that Venema only discloses a single circuit with a single current source (i.e., D-C power supply 10) that clearly is not a modulation ramp circuit. See e.g., Figure 1. The Office is alleging that the disclosure for both a matched reference and modulation ramp circuits in Venema are "V_s/R_1 and V_s/R_2" in Figure 1. Office

Action, page 7, item 11. Clearly, as figure 1 of Venema shows, there is only the single current source D-C power supply 10 which is not a current source for a modulation ramp circuit.

Accordingly, Applicant submits that Venema fails to disclose each and every element of claim 1 (and similarly in claim 6), and respectfully requests withdrawal of the rejection. Further, Sase does not remedy these glaring deficiencies in Venema.

With respect to dependent claims 2-5, 7 and 8 Applicant submits that these claims are allowable based on their dependency from allowable independent claims. The dependent claims are also believed to be allowable based for their own additional features.

VI. CONCLUSION

In light of the above remarks, Applicant respectfully submits that all claims are in condition for allowance. Should the Examiner require anything further to place the application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the number listed below.

Respectfully submitted,

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